dbx

180

Type I tape noise reduction system

The dbx 180 provides two channels of encode electronics and two channels of decode electronics in the dbx Type I tape noise reduction format. It features a maximum input/ouput capability of +24 dBm and is designed to interface with tape machines being operated at high nominal signal levels.

In the encoding process, signals are compressed by a 2:1 ratio, linear in decibels over a 100 dB range. During decoding, the signals are expanded by a 1:2 ratio to provide an output signal identical to the original input. An original program with a dynamic range of 90 dB is converted to an encoded signal with a dynamic range of 45 dB which can be easily accommodated by today's professional tape machines. When this 45 dB encoded signal is played back, the full 90 dB program is heard—without the saturation distortion, frequency response degradation and blurred imaging caused by attempting to record the same signal unprocessed.

While theoretically simple, the classic 2:1 compander-type noise reduction system was not possible to realize successfully prior to the introduction of two patented dbx circuits in the early 1970's. These were the Blackmer true RMS detection and Blackmer VCA (voltage controlled amplifier) circuits. The true RMS detection circuitry enables dbx noise reduction decoders to properly evaluate signal levels in spite of the phase shift induced in the encoded signal by real world tape machines. The unique linear to log characteristic and precision gain control provided by the Blackmer VCA enable 2:1 compansion to live up to its promise—providing high quality analog machines with a dynamic range better than digital.

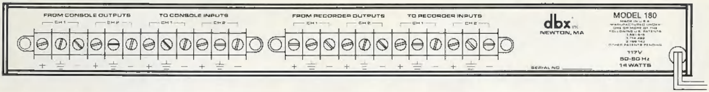
Application

The dbx 180 is intended for convenient use with professional 2 track tape machines. When properly used, the 180 will permit the recordist to produce a master tape which fully preserves the dynamic range of live music and is completely free of audible tape hiss and distortion due to tape overload.

The 180 tape noise reduction system is designed for installation between the console or mic mixer and the line level inputs to the tape machine. It is compact and light in weight and can easily be taken into the field on remotes or on location jobs. The separate encode and decode electronics permit decoded monitoring off tape of the signal being recorded.

Features

• active balanced high level inputs • +24 dBm output drive capability with provision for optional output balancing transformers • more than 40 dB additional dynamic range • compatible with all other dbx Type I tape noise reduction systems • true RMS level detection for perfect encode/decode tracking • requires only 1¾" rack space.



Specifications

Input impedance
75 kohm balanced
54 kohm single ended

Output impedance
Low, designed to drive 600 ohm or greater

Input level
+24 dBm maximum

Output level
+24 dBm maximum into 600 ohm

Distortion
<.5% THD 30 Hz to 100 Hz
<.1% THD 100 Hz to 20 kHz (total encode/decode—measured with encoder output connected directly to decoder input)

Equivalent input noise
Unweighted, 20 kHz bandwidth, −85 dBm

Frequency response
±.5 dB 40 Hz to 20 kHz, −1 dB @ 30 Hz, (encode/decode, typical program material tracking)

Slew rate
>10V/μ sec.

Effective noise reduction
30 dB plus 10 dB of headroom

Dynamic range (peak signal to A weighted background noise)
110 dB

Optional output transformer
Jensen #JE 123-S-PC or JE 123-S-LPC

Dimensions
1¾″ H × 19″ W × 12½″ D
(4.4 cm × 48.3 cm × 31.8 cm)

Power line
117 VAC, 50-60 Hz

Power consumption
14 W

Warranty
dbx products are covered under a limited warranty (parts and labor) for two years from date of original purchase

dbx®

Professional Products Division
dbx, Incorporated
71 Chapel Street
Newton, MA 02195
617/964-3210

Specifications subject to change without notice. Manufactured under one or more of the following U.S. patents: 3,681,618; 3,714,462; 3,789,143; 4,101,849; 4,097,767.
Other patents pending.

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